

STATE OF VERMONT  
PUBLIC SERVICE BOARD

Docket No. 7590

Petition of Green Mountain Power Corporation    )  
for a Certificate of Public Good approving the    )  
purchase of electricity pursuant to a Power       )  
Purchase Agreement with Granite Reliable       )  
Power, LLC    )

Order entered: 1/11/2011

**ORDER RE PURCHASE OF ADDITIONAL POWER BY GREEN MOUNTAIN POWER CORPORATION  
UNDER AMENDED AND RESTATED RENEWABLE ENERGY PURCHASE AGREEMENT WITH  
GRANITE RELIABLE POWER LLC**

**I. INTRODUCTION**

The Public Service Board ("Board") found, in its Order of May 13, 2010, that the purchase of capacity and energy by Green Mountain Power Corporation ("GMP" or "Company") under the Renewable Energy Purchase Agreement, dated December 16, 2009 ("PPA"), with Granite Reliable Power, LLC ("Granite"), will promote the general good of the state in accordance with 30 V.S.A. § 248, and the Board issued a Certificate of Public Good ("CPG") with respect to such purchase. Under the PPA, GMP agreed to purchase 25% of the capacity, energy and associated Renewable Energy Certificates ("RECs") from a 99 MW wind project, consisting of up to 33 wind turbines, that is under development in Coos County, New Hampshire (the "Project").

On October 28, 2010, GMP filed a motion for amendment of the CPG authorizing GMP to purchase an additional 7% of the capacity and energy from the Project pursuant to a First Amendment to the PPA, dated October 18, 2010 ("Amendment"). The additional purchases under the Amendment are expected to meet approximately one percent of the current annual

energy requirements of GMP over a 20-year period.<sup>1</sup> GMP also filed on the same date a motion for the Board to issue a protective order providing confidential treatment related to certain provisions in an unredacted version of the Amendment.

In this Order, the Board finds that the purchase of additional capacity and energy by GMP under the Amendment will promote the general good of the state in accordance with 30 V.S.A. § 248 and approves the issuance of an amended CPG. The Board declines at this time to issue a protective order for confidential treatment of certain filed material pending further proceedings on this issue.

## **II. BACKGROUND AND PROCEDURAL HISTORY**

GMP filed its original petition for a CPG approving power purchases from the Project under the PPA on January 15, 2010. Included with the petition was the prefiled testimony of Douglas C. Smith and related exhibits, which were admitted into the record in this docket at a technical hearing held on March 22, 2010. A public hearing was held on March 3, 2010; no member of the public spoke at the public hearing or filed written comments with the Board. On March 17, 2010, GMP filed a Memorandum of Understanding, dated March 17, 2010, between the Department of Public Service ("DPS" or "Department") and GMP ("MOU") under which the parties agreed that the PPA promotes the general good of the state and that a CPG should be issued. After finding that the purchase of power from the Project under the PPA satisfied the applicable criteria of Section 248(b) and will promote the general good of the state, the Board issued a CPG on May 13, 2010.

As set forth in GMP's motion for an amended CPG filed on October 28, 2010, the additional purchases of capacity, energy and RECs from the Project under the Amendment will increase the share of the Project's output purchased by GMP. GMP and Granite executed an

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1. The purchase by GMP from outside Vermont of electric capacity or energy representing more than one percent of its historic peak demand for a term exceeding five years requires the issuance of a CPG by the Board under 30 V.S.A. § 248(a)(1). Before issuing a CPG under Section 248 with respect to such purchase, the Board must find that the purchase will promote the general good of the state and that the applicable criteria set forth in Section 248(b) are satisfied.

Amended and Restated Renewable Energy Agreement ("Amended PPA") that incorporated the terms of the Amendment on October 18, 2010.

On December 16, 2010, GMP filed a Memorandum of Understanding, dated December 14, 2010, between the DPS and GMP ("Second MOU"). The Second MOU included, as Exhibit B, a proposal for decision stipulated to by the parties ("Stipulated PFD"), supporting the issuance of an amended CPG to authorize the additional purchases under the Amended PPA.

On December 23, 2010, GMP filed Attachment A to the Amended PPA and a Notice of Erratum signed by the parties to the PPA indicating that the right-hand column of Attachment C to the PPA Amendment should read "Off Peak."<sup>2</sup>

### **III. PRELIMINARY DETERMINATIONS; MOTION FOR PROTECTIVE ORDER**

In its October 28, 2010 filing, GMP requested that the Board issue an amended CPG without additional hearings because the Amendment does not represent a substantial change. In a letter filed with the Board on November 5, 2010, the Department asserted that the requirements for public and technical hearings were satisfied through the hearings previously held in this docket and that additional hearings would not be required.

Given the earlier hearings and the existing record already created in this docket, the Board agrees with the parties that further hearings are not required or needed.<sup>3</sup> The Amendment increases the share of the Project's output to be purchased by GMP and establishes the terms on which it will purchase such additional output. The fact that the additional output is being purchased from the same Project for a lower price than provided for in the original PPA, and the fact that the incremental quantity of power purchased is a relatively small amount (7 MW), are

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2. This filing included a redacted public version of Attachment A to the Amended PPA as well as an unredacted version which GMP stated was "filed pursuant to the Public Service Board's February 23, 2010, Protective Order in this Docket." This filing also included an unredacted executed version of the PPA Amendment which GMP stated was "also filed pursuant to the Protective Order." However, no motion for protective order accompanied the December 23 filing. We will treat these filings as allegedly confidential pending the further proceedings on GMP's October 28, 2010, motion for protective order discussed further below.

3. In addition to the factors cited by GMP and the Department, the Board notes that all parties have declined the opportunity for a hearing with respect to the proposed additional purchases of power under the Amended PPA, no member of the public spoke at the March 3 public hearing in this docket, and the Board has received no public comments regarding the original contract or the amendment.

further indications that a hearing is not needed. Based on a review of the existing record, the Amendment and the filings of the parties, including the Second MOU, there is a sufficient basis in the record for the Board to render findings on the proposed additional purchases under the Amendment and the Amended PPA.

GMP filed a motion for protective order on October 28, 2010, to provide confidential treatment for an unredacted version of the Amendment. Under the Second MOU, GMP and the DPS support the issuance of the protective order.

Upon a review of the motion for protective order, the Board is concerned about a lack of specificity in the supporting averment submitted by GMP. The Amendment, which consists of six pages, contains more than 30 redactions that cover a variety of terms, including pricing information. Yet GMP makes only a general non-information-specific averment on behalf of the redaction of all these items. Without providing any greater specificity as to why particular individual redactions should be provided with confidential treatment in the context of this particular power purchase agreement, GMP generally claims that the redactions constitute information that is "competitively sensitive" and that "contain information concerning the bargaining positions of all agreement parties. Disclosure will make it more difficult to negotiate such agreements in the future, and could disadvantage GMP in its negotiations with other potential suppliers." This lack of specificity alone precludes granting the motion at this time.

In addition, in the case of this particular power purchase, it is not clear to the Board that the information for which confidential treatment is sought is of such commercial sensitivity to overcome the strong public interest in disclosure. Together with the proposed purchases of CVPS from the Project that is the subject of proceedings in Docket 7589, it now appears that CVPS and GMP will collectively be purchasing more than 82% of the output of the Project for 15 years. In many cases, because of the effect on future negotiations with other parties, large suppliers of power may be reluctant to enter into long-term power supply arrangements with, or to make unusual concessions to, Vermont distribution utilities if commercially sensitive terms of such contracts were to be made public. However, given the amount of the total purchase now contemplated by CVPS and GMP relative to the size of Granite's Project, this argument for confidential treatment seems less compelling now than it was at the time of the original petition.

The unique aspects of this wind-resource Project also would seem to lessen the likelihood that disclosure of pricing and other terms could erode GMP's bargaining position in other power-supply negotiations. Finally, the fact that, at least initially, GMP will be paying a higher-than-market rate for power to purchase this resource may heighten the need for public disclosure. For example, without having knowledge of specific pricing information for purchases under the Amended PPA, it will be difficult for the public to evaluate whether the Board itself has made the appropriate trade-offs between price and other considerations in approving the proposed additional purchases.

Before ruling on the motion for protective order, however, the Board believes it is appropriate to allow for further submissions on this motion. Accordingly, the Board will provide the parties with the opportunity to make additional filings in support of this motion. In addition, GMP may, if desired, modify its motion for a protective order to include the allegedly confidential information filed by GMP on December 23, 2010 (see footnote 2, above). Any such filings shall be made by January 21, 2011.

#### **IV. FINDINGS**

Based on the entire record, including the original petition, the prefiled testimony and exhibits admitted into the record, GMP's motion for amendment of the CPG, the PPA, the Amendment, the Amended PPA, the Notice of Erratum, the MOU, the Stipulated PFD, the Second MOU and the exhibits thereto,<sup>4</sup> the Board makes findings as follows.

1. GMP is a company as defined by 30 V.S.A. § 201, provides electric power in the state of Vermont and as such is subject to the Board's jurisdiction pursuant to 30 V.S.A. § 203. Order of 5/13/10 at 3; Petition at 1; Stipulated PFD at 1.

2. GMP has entered into a PPA dated December 16, 2009, with Granite, a Delaware limited liability company, to purchase a portion of the output of a planned wind generation

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4. Because no party has requested a hearing, we are admitting into evidence the motion for amendment, the Amendment, the Amended PPA, the Notice of Erratum, the Stipulated PFD, the Second MOU, and the exhibits thereto, to ensure we have a complete evidentiary record for purposes of this Order.

facility known as the Granite Reliable Power Windpark located in Coos County, New Hampshire. Order of 5/13/10 at 4; Petition at 1.

3. GMP and Granite entered into the Amendment and the Amended PPA on October 18, 2010. Stipulated PFD at 2; Amendment at 1; Amended PPA.

*Description of Project, PPA and Amended PPA*

4. The Project will consist of up to 33 wind turbines with a capacity of 3 MW each, resulting in an overall output rating of up to 99 MW. The turbines will be located along approximately 6.5 miles of ridgeline that includes Dixville Peak, Mount Kelsey, Owlhead Mountain, and unnamed lower-elevation ridges. The Project will also include a set of collector lines, a substation near the southernmost group of turbines, a maintenance building and lay-down area, and a 5.8-mile, 115 kV transmission line interconnecting the substation with an existing transmission line that runs between Milan and Groveton, New Hampshire. Order of 5/13/10 at 4; Smith pf. at 6-7.

5. The Project will be located entirely outside Vermont and no new Vermont transmission lines will be required to import Project power. The Project will have only limited visibility from a very limited portion of Vermont (i.e., from Monadnock Mountain in Lemington, Vermont, about 11 miles away). Order of 5/13/10 at 4; Smith pf. at 37; Second MOU at 3.

6. The Project's power will be intermittent. The Project's annual average capacity factor is expected to be approximately 35 percent. This capacity factor is consistent with, although toward the high end of, estimates of output from other utility-scale wind projects GMP has encountered. Order of 5/13/10 at 4; Smith pf. at 18-19, 21.

7. The Project's actual output can be expected to fluctuate meaningfully around estimated average values based on actual wind conditions, with the magnitude of the variance depending on the time frame. In particular, output during individual hours will vary widely, from zero up to the Project capacity. Over time, periods of high and low wind will tend to offset, converging toward the long-term averages. It is reasonable to expect the annual project output to vary with a standard deviation of roughly 9 percent, with the standard deviation for individual months on the order of 20 percent. Order of 5/13/10 at 4; Smith pf. at 21.

8. The Project's output is expected to be markedly greater in the winter. There is a modest projected bias toward higher production values in overnight hours, which GMP expects to tip the balance of output slightly toward the commercial off-peak hours. These features of the projected output pattern are generally consistent with GMP's experience with its Searsburg, Vermont, wind generation plant and with GMP's understanding of projected output profiles from other land-based wind projects in the Northeast. Order of 5/13/10 at 5; Smith pf. at 19-20.

9. Under the Amended PPA, GMP will purchase 32 percent of the Project's net output, on a plant-contingent basis, for 20 years, beginning no earlier than April 2012. The Project output to be purchased by GMP includes energy, capacity and RECs, with the exception that GMP will not purchase capacity in the first five years. Order of 5/13/10 at 5; Smith pf. at 4, 7; Stipulated PFD at 2.

10. Since the Project's total output is planned to be about 99 MW, GMP originally expected its purchase share under the PPA to be about 25 MW. This purchase would provide an estimated 8 to 9 MW of average net output over the course of a year, representing approximately 76,000 MWh per year. This is about 3.8% of GMP's projected annual energy requirements initially, and a similar fraction over time, depending on actual project performance and trends in customer electricity requirements. Order of 5/13/10 at 5; Smith pf. at 4, 18-19.

11. The additional share of Project output that GMP plans to purchase under the Amended PPA is approximately 7 MW. This additional purchase will represent approximately 20,000 MWh of additional energy each year, which is equivalent to roughly an additional one percent of GMP's annual load obligation. Stipulated PFD at 2.

12. The price at which GMP will purchase the additional 7% of output of the Project under the Amendment is lower than the price at which it would have purchased the 25% of output under the original PPA. The price of this incremental purchase is among the lowest prices GMP has seen for new renewable resources and consistent with the low-end all-in cost-per-kWh scenario presented in its Kingdom Community Wind proceeding (Docket 7628). Stipulated PFD at 2-3; Amendment at 5; exh. GMP-1 at exhibit C.

13. Under the Amended PPA, GMP will only pay for energy, capacity, and RECs that are actually produced. Order of 5/13/10 at 5; Smith pf. at 5; Amended PPA at 10.

14. The Amended PPA provides for stable prices, escalating at a fixed (and modest) rate. Order of 5/13/10 at 5; Smith pf. at 22; Amendment at 5.

15. The Amended PPA includes separate pricing for peak and off-peak hours. Order of 5/13/10 at 5; Smith pf. at 21; Amendment at 5.

16. CVPS has signed a similar power purchase agreement under which it will purchase a percentage of the Project's output. The original PPA provided that, in the event that CVPS defaulted, Granite had the right (but not the obligation) to increase the GMP PPA percentage. If Granite exercised this option, the price of energy and RECs to GMP would be reduced significantly. In exchange for this option, GMP received a PPA price that is lower than it would have otherwise been. Order of 5/13/10 at 5; Smith pf. at 29-30.

17. The Amended PPA eliminates Granite's option to increase the GMP PPA percentage. This removes GMP's obligation to assume the option volume (15 MW) at a time outside of GMP's control. Motion to Amend at 4; Amendment at 5.

18. The delivery point for the energy purchases is the ISO-New England, Inc. ("ISO-NE") designated node expected to be located at a 115 kV Paris Switching Station located in Dummer, NH. For capacity, this delivery point will result in the Project being recognized in the ISO-NE "Rest-of-Pool" settlement and reliability grouping. ISO-NE designation of both delivery locations (energy and capacity) is subject to revision throughout the life of the contract. Order of 5/13/10 at 6; Smith pf. at 7-8.

19. The Amended PPA contains other provisions that are relatively standard for power purchase agreements that relate to, among other things, audit rights, scheduling, default, and *force majeure*. Order of 5/13/10 at 6; Smith pf. at 8; Amended PPA.

20. The Amended PPA does not contain credit provisions that would require either party to post additional financial assurances (i.e., collateral) based on corporate credit ratings to secure their responsibilities under the contract. As a result, neither party has a right to terminate or declare a contract default solely on the basis of financial standing (and therefore inability to provide such collateral). Order of 5/13/10 at 6; Smith pf. at 8; Amended PPA.



21. The default and termination provisions of the Amended PPA are more explicitly based on failure to pay for delivery and failure to achieve all of the required approvals for the Project and the purchase in a timely manner. Order of 5/13/10 at 6; Smith pf. at 9; Amended PPA.

*The Second MOU*

22. The parties to the Second MOU agree that the purchase by GMP of electricity, capacity and RECs under the Amended PPA is in the general good of the state, and that the Board should issue an amended CPG to that effect. The parties to the Second MOU also agree that the acquisition of power by GMP under the Amended PPA meets each of the applicable criteria under 30 V.S.A. § 248(b). Second MOU at 3-4.

**Non-Applicability of Other Criteria**

[30 V.S.A. §§ 248(b)(1), 248(b)(5), 248(b)(9)]

Section 248(b)(1) and (5) apply only to in-state facilities. Because the Project is located entirely in New Hampshire, the Board does not need to address these criteria. In addition, the Project does not involve a waste to energy facility for purposes of Section 248(b)(9).

**Present and Future Demand for Service**

[30 V.S.A. § 248(b)(2)]

23. The purchase by GMP under the Amended PPA is required to meet the present and future demand for service which could not otherwise be provided in a more cost-effective manner through energy conservation programs and measures and energy efficiency and load management measures, including but not limited to those developed pursuant to the provisions of subsection 209(d), section 218c and subsection 218(b) of Title 30. See findings 24 to 31, below; Smith pf. at 17; exh. GMP-8 at 3; Second MOU at 3.

24. About three quarters of GMP's current power supply sources will expire between 2012 and 2015, leaving GMP with a need for substantial new resources, particularly long-term ones that provide price stability. GMP is planning to replace a significant portion of the expiring

supplies with new renewable resources, including the PPA. Order of 5/13/10 at 7; Smith pf. at 17.

### *Energy Efficiency*

25. It is reasonable to expect that some significant amount of future energy efficiency can be obtained at an effective cost lower than the price of the Granite PPA. It is not realistic, however, to expect that cost-effective energy efficiency or other demand-side resources could meet anything close to the amount of GMP's resource needs. This is due, in part, to: (1) the large magnitude of GMP's resource needs; (2) the fact that Vermont has already aggressively pursued electric energy efficiency and is expected to continue to do so (with or without the Granite purchase); and (3) the prospect that energy-efficiency costs will increase over time (that is, the prospect that the "yield" from energy-efficiency expenditures will decrease over time) as the baseline efficiency of electricity end uses increases. Order of 5/13/10 at 7; Smith pf. at 17-18.

26. In estimating its future power needs, GMP has assumed that Vermont will continue to deliver an aggressive package of energy-efficiency measures. Specifically, GMP has assumed that the electricity consumption of its customers will increase only modestly over the long term, despite an increasing customer count. If the future electricity requirements of GMP customers actually increase more meaningfully over time, GMP's resource needs will obviously be greater than assumed. Order of 5/13/10 at 7; Smith pf. at 18; exh. GMP-2.

### *Renewable Energy*

27. GMP's purchase under the PPA is consistent with, at a minimum, the following renewable state energy goals (30 V.S.A. § 8001):

- Providing an incentive for the state's retail electricity providers to enter into affordable, long-term, stably priced renewable energy contracts that mitigate market price fluctuation for Vermonters;
- Developing viable markets for renewable energy and energy-efficiency projects; and
- Contributing to reductions in global climate change and anticipating the impacts on the state's economy that might be caused by federal regulation designed to attain those reductions.

Order of 5/13/10 at 8; Smith pf. at 25-26.

28. GMP estimates that approximately 1.8 percent of its load is currently being met with "new renewable resources" as defined in 30 V.S.A. § 8002(4). Order of 5/13/10 at 8; exh. GMP-6; tr. 3/22/10 at 23 (Smith).

29. Section 8005(2) of Title 30 establishes a goal that 20 percent of total statewide electric sales before July 1, 2017, be generated by Sustainably Priced Energy Enterprise Development Program ("SPEED") resources. GMP estimates that, counting current resources that will still be in its portfolio in 2017 plus the amount purchased under the Amended PPA, approximately 6.6 percent of its load will be met with resources that would count towards meeting this goal. If other identified potential new renewable resources that are the subjects of other pending Board proceedings are added to this amount, GMP estimates that approximately 10.2 percent of its load will be met with resources that would count towards meeting this goal. Order of 5/13/10 at 8; exh. GMP-6; tr. 3/22/10 at 23-24, 30-31 (Smith); 30 V.S.A. § 8005(2); Stipulated PFD at 2.

30. Because GMP's purchase under the Amended PPA is from a new renewable resource, it is needed to help meet the state's aggressive renewable energy goals. Order of 5/13/10 at 8; Smith pf. at 5; Stipulated PFD at 2.

31. GMP's retail electric sales in calendar year 2008 were approximately 50,000 MWh lower than its retail electric sales in calendar year 2005. Order of 5/13/10 at 9; tr. 3/22/10 at 26 (Smith).

### Discussion

We incorporate by reference the discussion in the Board's Order of May 13, 2010, relating to the present and future demand for service.<sup>5</sup> As the Board observed in that Order, the committed power-supply resources of GMP will diminish significantly with the expiration of major existing power-supply contracts over the next several years,<sup>6</sup> and there is an established need for GMP to enter into significant new supply arrangements to meet present and future

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5. Order of May 13, 2010, at 9-12.

6. See exh. GMP-2 for an indication of the magnitude of the anticipated shortfall between power demand and supply in future years as existing contracts expire.

demand for service. The additional purchase of power from the Project under the Amendment will have a limited effect in meeting this demand as all the power purchased under the Amended PPA will only meet a small portion of present and expected demand for service. As noted in the Order of May 13, 2010, the gap between present and future demand for service and the supply arrangements that GMP currently has in place to meet that need beginning in 2012 is so great that future demand could not be entirely met in a more cost-effective manner through energy-conservation programs and measures and energy efficiency and load-management measures.

The broader context of GMP's overall need makes it clear, at least at this stage of the committed-power-supply replacement process, that the purchase of additional power under the Amendment is required to meet the need for present and future demand for service which could not otherwise be provided in a more cost-effective manner through energy-conservation programs and measures and energy efficiency and load-management measures.

The PPA and Amended PPA result from the efforts of GMP to enter into supply arrangements that further the resource-selection policies established by Chapter 89 of Title 30. The power to be purchased from Granite will constitute "new renewable energy" as defined under 30 V.S.A. § 8002(3). Because GMP is purchasing the power generated by the Project under a long-term contract, the purchase would count as an eligible resource for purposes of 30 V.S.A. § 8005(d)(1) and (2).

In light of state renewable-energy objectives, policies and requirements as set forth in Chapter 89 of Title 30, GMP's power supply portfolio will need to include some new renewable resources in a significant, but as yet undetermined, amount. As such, there is sufficient basis to conclude that the purchase of new renewable resources under the Amended PPA (constituting approximately 4.8% of GMP's current annual energy requirements) is required to meet the need for present and future demand for service. The need for additional new renewable resources is also relevant to findings of economic benefit as discussed further below.

**System Stability and Reliability; Service by Existing Infrastructure**

[30 V.S.A. §§ 248(b)(3), 248(b)(10)]

32. Neither the Project nor the transmission of power purchased under the Amended PPA will adversely affect system stability or reliability. The purchase can be served economically by existing or planned transmission resources. *See* findings 33 to 35, below; Order of 5/13/10 at 12; exh. GMP-8 at 3; Second MOU at 3.

33. The Project is subject to ISO-NE's Large Generating Facility interconnection procedures, and the Project developer is thereby required to extensively study the Project's effect on the regional and local transmission system. To the extent that these studies conclude that the system would be negatively affected by the connection of the Project, the developer must commit to, and pay for, transmission improvements or alter the Project until it no longer causes negative reliability outcomes. This process is administered under a tariff filed at the Federal Energy Regulatory Commission (ISO Open Access Transmission Tariff ("OATT") Schedule 22) and the ISO-NE Reliability Committee is charged with evaluating a project's study outcomes and upgrade determinations within the process. Order of 5/13/10 at 12; Smith pf. at 32-33.

34. On July 21, 2009, the Project's Proposed Plan Application was approved by the ISO-NE Reliability Committee. Granite received a letter from ISO New England certifying this finding and noting the various agreements achieved between the Project and the affected transmission owner for the necessary system upgrades. This positive reliability finding, along with sections of the Amended PPA that state that GMP is not responsible for any transmission costs incurred by the Project to transmit the energy to the delivery point, ensure that GMP's purchase of the power from the Project will not be economically affected by any of the required transmission upgrades. Additionally, after the delivery point and at the bulk transmission system in New England, it is the responsibility of load, not generation, under Schedule 21 of the ISO New England OATT, to support the ongoing cost of the transmission system. Order of 5/13/10 at 13; Smith pf. at 33; exh. GMP-4; Amended PPA at 11.

35. No new Vermont transmission lines will be required to import Project power. Order of 5/13/10 at 13; Smith pf. at 37; Second MOU at 3.

**Economic Benefit to the State**

[30 V.S.A. § 248(b)(4)]

36. The purchase under the Amended PPA will provide an economic benefit to the state. *See* findings 37 to 54, below; Order of 5/13/10 at 13; Smith pf. at 33; exh. GMP-8 at 3; Second MOU at 3.

37. The Amended PPA will provide a long-term new renewable power source that is stably priced, at prices that are favorable compared to other new renewable alternatives that are presently available. This purchase will increase the price stability of GMP's supply portfolio, reducing ratepayer exposure to market-price uncertainty driven by fossil-fuel price volatility and other factors. Order of 5/13/10 at 13; Smith pf. at 33-34; Stipulated PFD at 2-3.

*Request for Proposals*

38. In November 2008, GMP, CVPS, and Vermont Electric Cooperative, Inc. ("VEC") issued a Request for Proposals ("RFP") for supply resources. These utilities received 33 proposals in response to the RFP, representing 1,820 MW. The proposed resources included a variety of fuels. More than 425 MW of the proposed resources were so-called "premium renewables," that is, sources that represent new renewables under Vermont's SPEED law and would qualify as Class 1 renewables under Renewable Portfolio Standards in neighboring states. Order of 5/13/10 at 13-14; Smith pf. at 9-10; exh. GMP-5; tr. 3/22/10 at 73-74 (Smith).

39. For purposes of comparing the cost of the PPA to alternative non-intermittent sources, GMP applied a moderate discount to the projected market value of the PPA's output. This adjustment was intended to compensate for the direct costs of wind's intermittence along with the potential that, in the future, some amount of operational costs associated with integrating wind resources into the ISO-NE market may be assigned to those wind resources. Order of 5/13/10 at 14; Smith pf. at 23.

40. The PPA was the lowest-priced source within the premium renewable project category from the RFP with which GMP has been able to develop a binding agreement. Order of 5/13/10 at 14; Smith pf. at 9-10.

41. When considering the price (cents per kWh for energy and dollars per kW/month for capacity) combined with other factors that determine the value of the power (such as location, profile of output across the year, time of day, etc.), the PPA was the most cost-effective premium renewable resource that responded to the RFP. Order of 5/13/10 at 14; tr. 3/22/10 at 74-75 (Smith); tr. 3/22/10 at 75 (Foley).

42. The Amendment provides for the purchase of additional incremental power from Granite at a price lower than the price of the parties' initial PPA. Consummation of the proposed Amendment will improve the overall cost-effectiveness of this source of new renewable energy, capacity and RECs. Stipulated PFD at 2-3.

#### *PPA Price*

43. During the past several years, GMP has engaged in bilateral discussions with numerous proposed premium renewable projects in Vermont and neighboring states. These include other wind projects, along with projects based on other production technologies that include solar, new-build biomass, and biomass retrofits. The PPA is an attractively priced resource; the price of the incremental purchase under the Amendment is among the lowest prices GMP has seen for new renewable resources and is consistent with the low-end all-in cost-per-kWh scenario presented in GMP's Kingdom Community Wind proceeding (Docket 7628). This experience is consistent with consultant assessments that in New England, utility-scale wind is presently the most cost-effective premium renewable technology that can be built on a large scale. Order of 5/13/10 at 14; Smith pf. at 10; Stipulated PFD at 3.

44. When GMP entered into the PPA, and then-current market values for renewable attributes were taken into consideration, the effective price under the PPA was comparable in its early years to proposals received for all-hours, energy-only system contracts. However, in recent months, near-term forward-market prices have declined so that the initial price under the PPA will be somewhat higher than current market indications. Order of 5/13/10 at 14; Smith pf. at 10; tr. 3/22/10 at 9 (Smith).

45. Payments for energy and RECs will be based on the amount of energy the Project actually produces. If the Project produces less energy than expected, GMP will pay less.

Similarly, GMP will only pay for the actual capacity value (in kW) that the Project provides in the ISO-NE capacity market. Order of 5/13/10 at 15; Smith pf. at 15; Amended PPA at 10-11.

46. The financial effect of wind output fluctuations will be limited to the difference between the Amended PPA price and then-current spot-market prices for energy and RECs. The financial impact of low wind-production events on GMP's portfolio will tend to be limited by the fact that large energy price spikes are infrequent, and GMP's existing portfolio contains substantial amounts of intermediate and peaking capacity that can be utilized during infrequent combinations of market-price spikes and low-wind output. Order of 5/13/10 at 15; Smith pf. at 23; Amended PPA at exh. C.

47. GMP expects that the Project's energy output will achieve market-clearing-price (Locational Marginal Price or "LMP") revenues that are modestly lower than the all-hours average. The Amended PPA's separate pricing for peak and off-peak hours provides some protection for customers against the potential that the actual fraction of output during the off-peak hours exceeds current projections. Order of 5/13/10 at 15; Smith pf. at 20-21; Amended PPA at exh. C; Notice of Erratum.

### *Hedging*

48. Electricity market prices are volatile and the range of potential future electricity and REC market prices is wide. From a portfolio perspective, it is appropriate to hedge a portion of GMP's projected power supply needs with long-term resources like the PPA, thereby reducing customers' exposure to both higher- and lower-price outcomes. Order of 5/13/10 at 15; Smith pf. at 12.

49. Because the Amended PPA price will be stable, escalating at a fixed (and modest) rate, and the Amended PPA volumes will be relatively stable over periods of multiple months and years, it is expected to operate as hedge against the influences that affect market prices across months and years (e.g., fossil fuel prices, national "cap and trade" limits on greenhouse gas emissions, regional electricity supply/demand changes). Because these are the greatest uncertainties affecting long-term wholesale electricity prices, the Amended PPA should effectively protect GMP customers from long-term market-price variations, albeit not as



effectively as a fixed block of energy would. Order of 5/13/10 at 15; Smith pf. at 22; Amended PPA at exh. C; Notice of Erratum.

50. The intermittence of the wind output will tend to reduce the effectiveness of the PPA as a hedge against electricity market-price changes of shorter durations (e.g., from an hour to a month). The PPA will be a less-consistent hedge against temporary extreme energy price "spikes" that can occur (typically for a few hours at a time) during extremely high electricity demand and/or outages of major generating units, because it is possible that during the few hours of the price spike, the wind may not be blowing. The Project's winter-weighted production profile will tend to make it a more effective hedge against winter price spikes driven by cold weather and fossil-fuel price spikes, while its lower summer output will tend to make it a less effective hedge against summer price spikes. Order of 5/13/10 at 16; Smith pf. at 22.

#### *Other Economic Benefits*

51. The PPA will increase the diversity of GMP's supply portfolio, in terms of technology and fuel source. The Granite purchase will be only the second significant wind power source in the Company's portfolio, after the existing Searsburg plant which produces roughly 0.5 percent of GMP's power needs. Order of 5/13/10 at 16; Smith pf. at 14.

52. The Amended PPA's lack of credit provisions that would require either party to post collateral based on corporate credit ratings to secure their responsibilities under the contract is appropriate, due primarily to the PPA's long term and the type of facility. Despite the PPA's limited size, its 20-year term means that more rigorous collateral requirements (of the type that may be seen in shorter-term fixed-price system energy purchases) could potentially produce very large collateral-posting requirements (i.e., many millions of dollars). This level of potential collateral posting would probably be financially infeasible for Granite and/or for GMP, or could materially increase the effective price of the purchase. Order of 5/13/10 at 16; Smith pf. at 8; Amended PPA.

53. The Project's output can be expected to lower market energy prices in New England, under certain circumstances. The lowering of market energy prices (or "suppression") results from the economic dispatch process of ISO-NE, under which the market clearing price (or LMP)

is established by the highest-priced bid selected for operation. Introduction of zero-cost energy from the wind project into the ISO-NE system will displace output from the marginal (price-setting) sources which are usually fossil-fired generating units. During hours without transmission constraints, this displacement could occur almost anywhere in New England; if congestion is present the displacement may be limited to generating units closer to the Granite project. Order of 5/13/10 at 16-17; Smith pf. at 36.

54. In some hours, energy displacement may have little or no effect on the energy market price, because the marginal (price-setting) resource remains the same. In other hours, displacement will cause a lower-cost generating resource to become the price-setting one, resulting in a lower LMP. During some hours — particularly during "superpeak" hours in which the price-setting portion of the ISO-NE bid stack is steep, a small displacement can produce a disproportionately large LMP decrease. Over the course of many hours, this will tend to lower spot-market prices and forward-market prices, benefiting power buyers like GMP and other Vermont distribution utilities. Because of this, the PPA's emission-displacement and price-suppression effects will benefit the state environmentally and economically. Order of 5/13/10 at 17; Smith pf. at 36-37.

### Discussion

We incorporate by reference the discussion in the Board's Order of May 13, 2010, relating to the economic benefit to the state of the purchase of power under the PPA.<sup>7</sup> In our Order of May 13, 2010, the Board found that the PPA is expected to provide an economic benefit to Vermont because it represents a new, long-term power resource for GMP at prices that are relatively stable and compare favorably to the prices of other available, new renewable resources. The purchase of additional power under the Amended PPA at a lower price than provided in the original PPA strengthens that conclusion with respect to the purchase of additional power.

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7. Order of May 13, 2010, at 17-18.

**Integrated Resource Planning**

[30 V.S.A. § 248(b)(6)]

55. The purchase under the Amended PPA is consistent with the principles for resource selection expressed in GMP's approved least-cost integrated plan. Order of 5/13/10 at 18; Second MOU at 3; Stipulated PFD at 3.

**Compliance with Electric Energy Plan**

[30 V.S.A. § 248(b)(7)]

56. The purchase under the Amended PPA is in compliance with the electric energy plan approved by the Department under Section 202 of Title 30. Order of 5/13/10 at 19; exh. GMP-7; exh. GMP-8 at 3; Smith pf. at 24; Second MOU at 3.

**Outstanding Resource Waters**

[30 V.S.A. § 248(b)(8)]

57. The purchase under the Amended PPA does not involve a facility affecting or located on any segment of the waters of the state that has been designated as outstanding resource waters by the Water Resources Board. Order of 5/13/10 at 19; exh. GMP-8 at 3; Smith pf. at 37-38; Second MOU at 3.

**V. CONCLUSION**

Based on the findings set forth above, the Board concludes that the additional purchase of electric capacity and energy by GMP as provided for in the Amendment and Amended PPA will promote the general good of the state.

**VI. ORDER**

IT IS HEREBY ORDERED, ADJUDGED, AND DECREED by the Public Service Board of the State of Vermont that:

1. The Memorandum of Understanding, dated December 14, 2010, between Green Mountain Power Corporation ("GMP") and the Vermont Department of Public Service is

approved, except that the motion for protective order filed by GMP on October 28 is not approved pending further proceedings in this docket.

2. The parties shall have until January 21, 2011, to make additional filings in support of GMP's motion for protective order.

3. The purchase of additional capacity and energy by GMP as provided in the First Amendment, dated October 18, 2010, to the Renewable Energy Purchase Agreement, dated December 16, 2009, between GMP and Granite Reliable Power, LLC, will promote the general good of the state, and an Amended Certificate of Public Good for the purchase of capacity and energy by GMP under the Amended and Restated Renewable Energy Purchase Agreement shall be issued.

Dated at Montpelier, Vermont, this 11<sup>th</sup> day of January, 2011.

<u>s/ James Volz</u>	)	
	)	
	)	PUBLIC SERVICE
<u>s/ David C. Coen</u>	)	
	)	BOARD
	)	
	)	OF VERMONT
<u>s/ John D. Burke</u>	)	

OFFICE OF THE CLERK

FILED: January 11, 2011

ATTEST: s/ Susan M. Hudson  
Clerk of the Board

*NOTICE TO READERS: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Board (by e-mail, telephone, or in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: psb.clerk@state.vt.us)*

*Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Board within thirty days. Appeal will not stay the effect of this Order, absent further Order by this Board or appropriate action by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Board within ten days of the date of this decision and order.*